

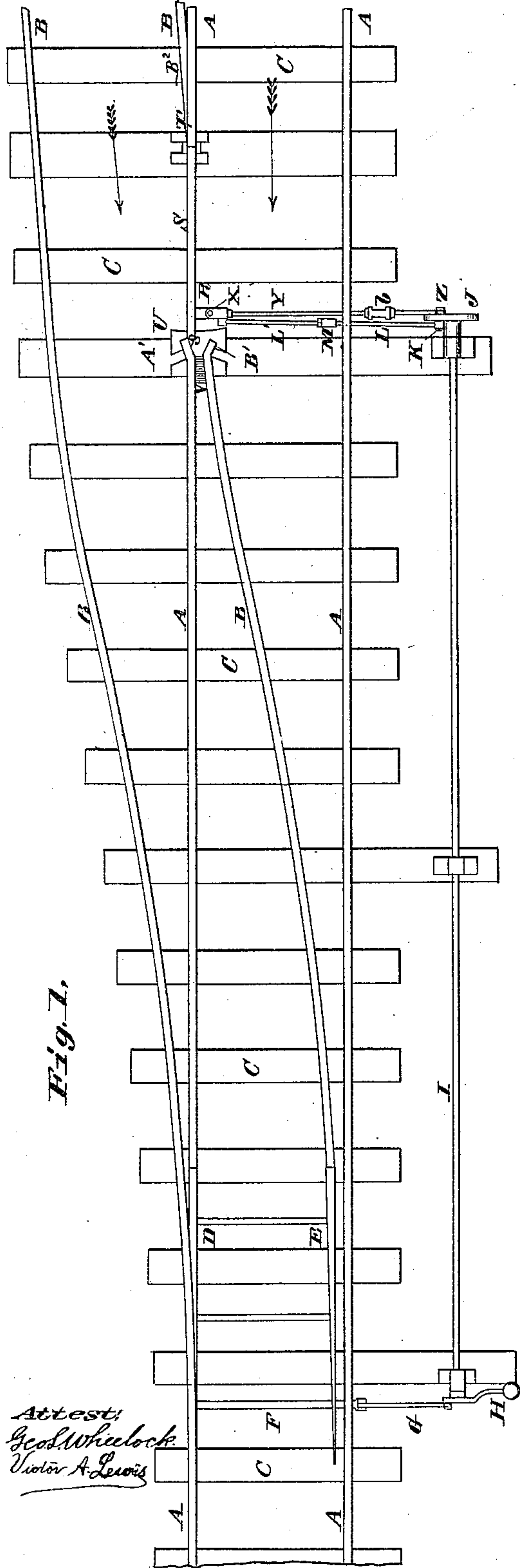
(No Model.)

M. WUERPEL & H. P. TAUSSIG.

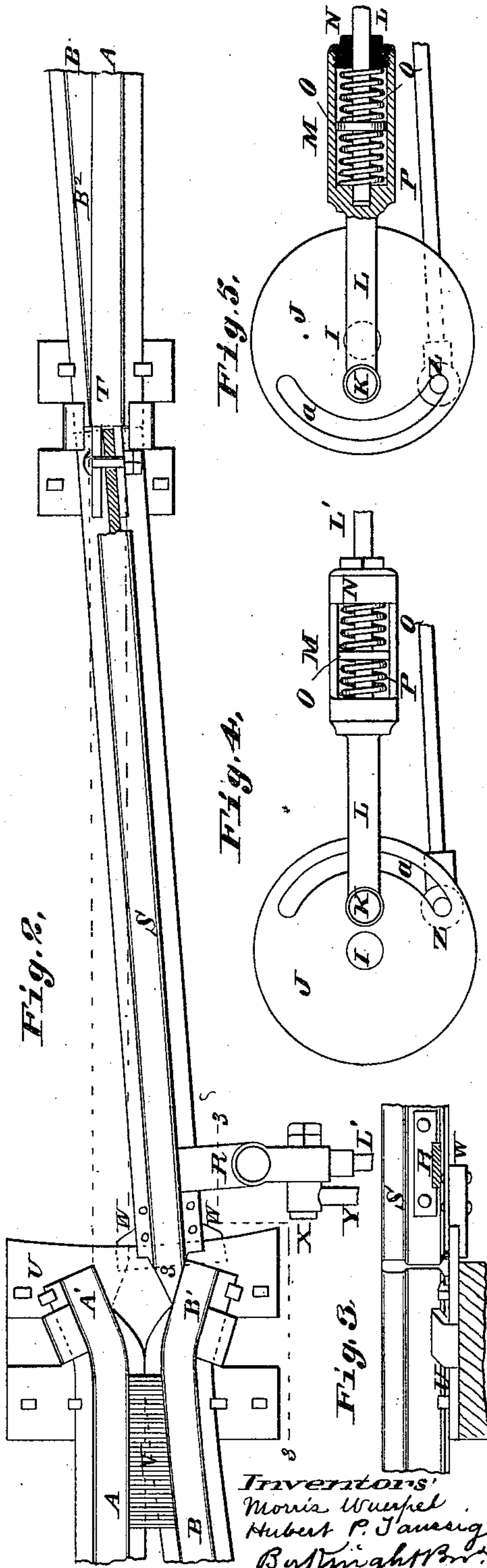
RAILWAY SWITCH.

No. 348,089.

Patented Aug. 24, 1886.



Attest:  
Geo. Wheelock  
Victor A. Lewis





# UNITED STATES PATENT OFFICE.

MORRIS WUERPEL AND HUBERT P. TAUSSIG, OF ST. LOUIS, MISSOURI.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 348,089, dated August 24, 1886.

Application filed March 14, 1885. Serial No. 158,892. (No model.)

*To all whom it may concern:*

Be it known that we, MORRIS WUERPEL and HUBERT P. TAUSSIG, both of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a top view, showing our switch in connection with a split switch, the parts being connected so as to move simultaneously. Fig. 2 is an enlarged top view of the switch, part in section, the switch-rods being broken off. Fig. 3 is a longitudinal section at 3 3, Fig. 2. Fig. 4 is an enlarged side view of the crank disk or wheel, showing the ends of the switch-rods connected therewith; and Fig. 5 is a similar view of the disk, except that the position is changed.

The spring-case in Fig. 5 is shown in axial section. The rails of the main track are shown at A, and the rails of the side track at B, and C are ties.

D and E are the switch-rails of a split switch, connected to a switch-bar, F, which is connected by a rod, G, to a lever, H, or any other suitable device for throwing the switch. The lever H is upon a rock-shaft, I, which carries a crank wheel or disk, J.

K is a crank-pin on the wheel J, to which is strapped or otherwise connected the section L of the switch-rod. Upon the section L is a socket, M, closed by a screw-plug, N, that has a central bore, through which passes the end of the rod-section L'. The part of the section L' which is within the socket has a fixed collar, O.

P and Q are spiral springs, which surround the rod each side of the collar O, and have bearing against the sides of the collar and the bottom of the socket and the plug N, respectively. The rod L' is connected at R to the switch tongue or rail S, which is connected to the point T in such a manner as to allow the necessary side movements of its free end in being brought into contact with the bent ends A' B' of the rails A and B. These ends A' and B' are bent outward sufficiently to avoid the cutting away of any part of the crown or head of the rail; but the bases of the rails are cut

away sufficiently to allow the wedge-shaped point s to be brought in contact with the sides of the crowns.

U is a base-plate, upon which the bent ends A' B' are spiked down, and upon which the point s slides.

V is a distance-block extending from web to web of the rails, and secured by transverse bolts passing through the rails and block.

W is a plate secured to the under side of the switch-tongue at the free end, and having a lip extending beneath the base-plate U, and bearing against the under side of the plate, to hold down the point s.

X is a wrist-pin projecting from one side of the head of the rod-section L', and Y is a rod, one end of which is strapped or otherwise connected to the wrist-pin X. The other end of the rod Y carries a pin, Z, which works in a curved slot, a, of the wheel J, the slot being shown as curved concentrically with the wheel. This form of the slot, though preferable, (as causing less friction against the pin,) is not essential.

In throwing the switch-tongue S from point A' to B', or vice versa, the wheel turns through one-half of a rotation, and is on dead-center in either position. Now, supposing a train should be approaching the switch in the direction indicated by arrow, upon either the side or the main track, and the switch-tongue S set for the other track, it will be seen that the wheel-flange would tend to force the tongue into connection with the track upon which the train might be; but as the crank would be upon a dead-center this could not be done without bending the rod L L', unless some means should be provided for turning the crank from its dead-center. This is the purpose of the rod Y. The length and position of the slot a are such that when the switch-tongue is in one position the pin Z is at one end of the slot, and when the tongue is in the other position the pin is at the other end of the slot. The arrangement is such that when the switch-tongue S is across the path of a wheel running in the direction of the arrows the impingement of the wheel upon the tongue will compress one of the springs P or Q, and simultaneously press the pin Z against the end of the slot a, and so turn the wheel from its dead-center, and when



this is done the pressure of the rod L L' upon the crank-pin will turn the wheel J through the remainder of its semi-rotation, carrying the other end of the slot *a* to the pin Z.

5 *b* is an extension-joint in the rod Y, to enable the adjustment of the rod in length. It will be seen that on the movement of the switch-rail S by a wheel, as hereinbefore set forth, the switch rails or tongues D E will have  
10 simultaneous movement. The end T of the rail A keeps its full size to the butted end, and the end B<sup>2</sup> of the rail is beveled, as shown, and attached to the side of the other rail, the outer sides of the ends A' B<sup>2</sup> being in line with the  
15 sides of the tongue S in its different positions, respectively.

We are aware that the ends of the main rail and the branch rail have been bent outward at their extremities to such an extent as to  
20 avoid cutting away any of the web where the wedge-shaped end of the switch rail or tongue comes in contact therewith. This is not the equivalent of our invention, inasmuch as it necessitates the cutting away of the entire  
25 crown on one side, to avoid which is one purpose of our invention.

We are also aware that it is common under various constructions to use pivoted switch-tongues, so as to dispense with frogs; also,  
30 that the switch-tongue has been pivoted at a short distance from one end, so as to work in connection with two converging rails without requiring their ends to be united together, or both or either of them beveled.

35 We are also aware that converging rails of various forms have been used in connection with frogs. Our invention dispenses entirely with the use of a frog and with guard-rails, thereby avoiding fruitful sources of danger  
40 both to the switchman and to passing trains. It further avoids any necessity for the separation of the ends of the converging rails where they connect with a pivoted tongue or switch-rail common to both, and also dispenses with

the necessity of any reduction in the width of 45 the main rail, by which the principal wear is sustained.

We claim—

1. The combination of an oscillating crank-wheel and two rods connected together and 50 having their ends respectively connected to the wheel by a crank-pin on the wheel, and by a pin on the rod working in a slot of the wheel.

2. The combination of two switch-rods connected to the moving part of a switch-rail, or to each other, the one rod having capacity for extension and contraction, and connected to a crank-pin on an oscillatory wheel, and the other rod carrying at the free end a pin work- 60 ing in a slot of the wheel, for the purpose set forth.

3. The combination of the switch rail or tongue S, with V-pointed or wedge-formed end s, and the side and main track rails bent 65 outward at B' A' sufficiently to allow the tongue to be set in line with said rails without the removal of any part of the crown of the bent ends A' B'.

4. The combination of switch-rail S, the two 70 switch-rods L L' and Y, connected to crank-wheel J, substantially as set forth, the wheel J, rock-shaft I, with a crank thereon, rod and bar G F, connected to said crank, and switch-rails D E, connected to bar F, causing the 75 simultaneous moving of the two switches, or two parts of the compound switch S D E.

5. The combination of the rod L L', having spring-connection M N O P Q, and connected to the crank-pin K of wheel J, and the rod Y, 80 attached to the rod-section L', or to the switch-tongue, and having at the other end a pin, Z, working in the slot *a* of the wheel J.

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Witnesses:

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